

# Demonstrating a Decrease in HAIs Across 5 Hospitals

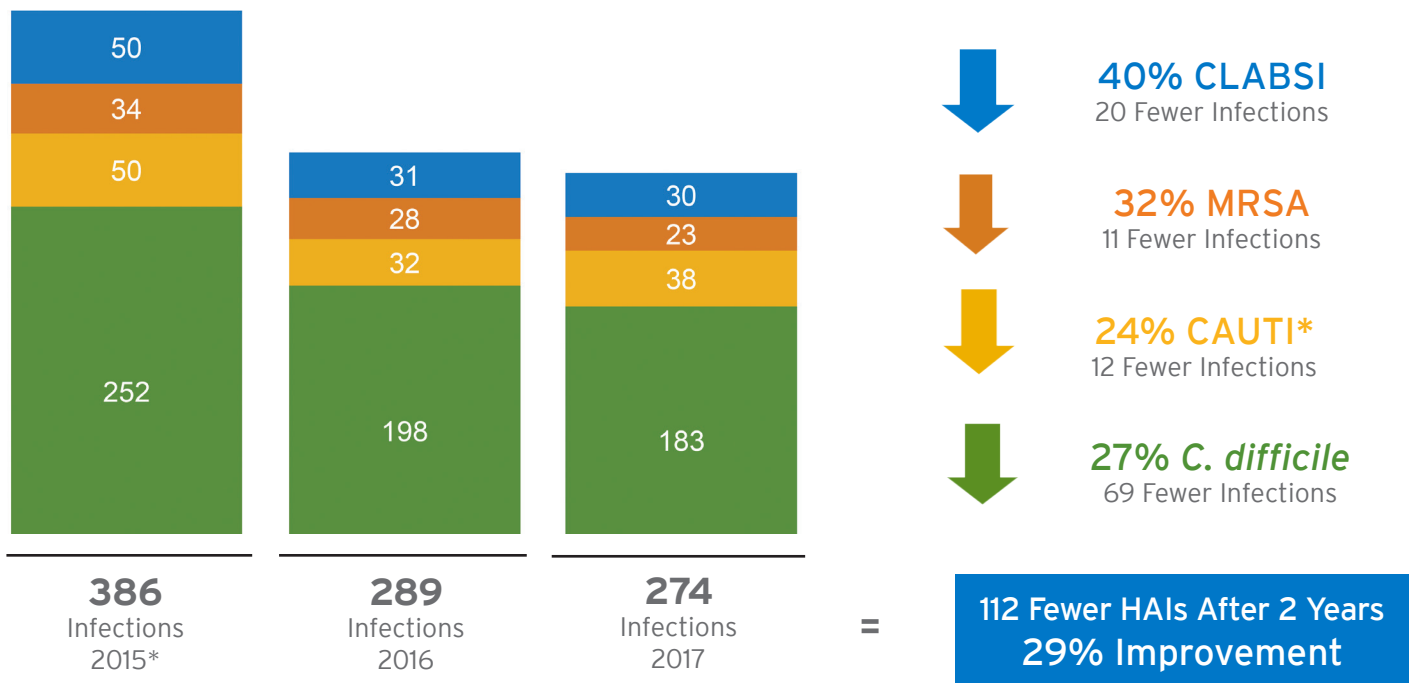
## Following the Implementation of a Hand Hygiene Compliance Monitoring System

On any given day, 1 in every 31 hospital patients has at least one healthcare-associated infection (HAI).<sup>1</sup> According to leading health organizations, hand hygiene is the most effective way to prevent HAIs, including those that are becoming more difficult to treat and prevent, because hands are the main pathways for germ transmission during healthcare.<sup>2,3</sup>

The Ecolab Hand Hygiene Compliance Monitoring System\* is an electronic hand hygiene reminder system designed to help hospitals achieve the highest level of sustained hand hygiene compliance through accurate recording and reporting of individual hand hygiene events. Five full hospitals ranging, in size from 247 to 385 beds, installed this electronic hand hygiene compliance monitoring technology in a total of 1,609 beds.

A retrospective analysis of the hospital infection rates two years after implementation of the electronic hand hygiene compliance monitoring system showed a decrease in total annual rates of HAIs. This data is based on reporting to the Centers for Medicare and Medicaid Services, which requires participating hospitals to submit information on central line-associated bloodstream infections (CLABSIs), catheter-associated urinary tract infections (CAUTIs), certain surgical site infections (SSIs), MRSA bacteremia and *C. difficile* laboratory-identified events.<sup>4</sup>

### Fewer HAIs



### Increased Rates of Hand Hygiene Compliance

The Centers for Disease Control and Prevention estimates that hand hygiene compliance is less than 50% in hospitals.<sup>2</sup> The compliance levels across all 5 of these hospitals have risen to **86-90%** since implementation and have been sustained.

While this change in infection rates may not be solely attributed to the introduction of a hand hygiene compliance monitoring system, it is important to note that **these 5 facilities experienced these decreases after the installation of the monitoring system.** Hospitals may implement other HAI reduction initiatives including antimicrobial stewardship programs or improved environmental hygiene. These, in combination with a hand hygiene compliance monitoring system may help reduce the risk of HAIs and help improve patient safety and experiences.

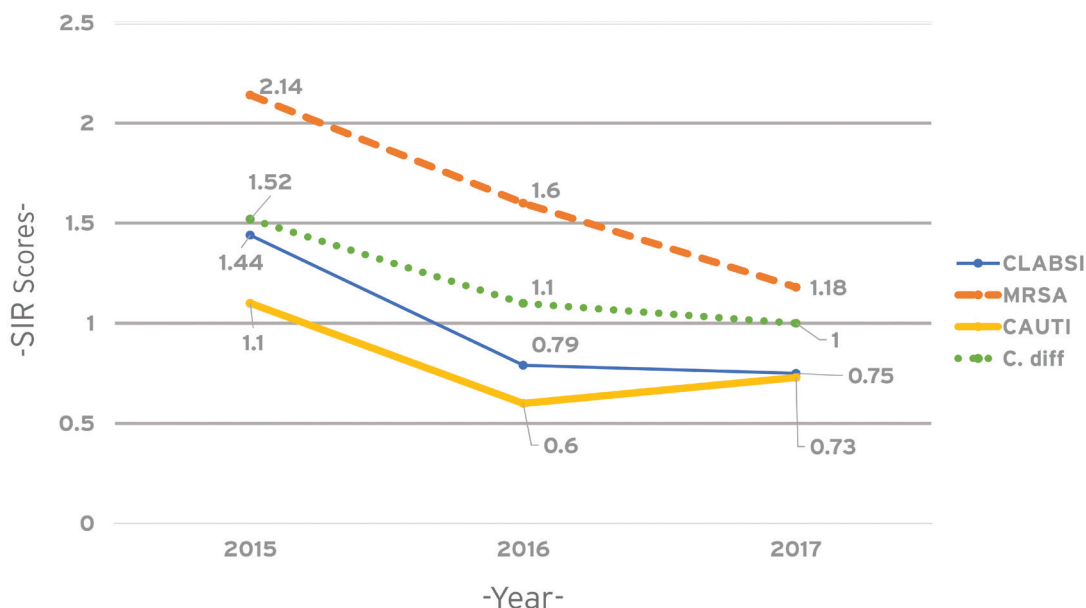
\*Previously marketed as the UltraClenz Patient Safeguard System.

\*No data was available for CAUTI in 2015. CAUTI data included in 2015 was collected in 2014.

## Improved Standardized Infection Ratios

Standardized Infection Ratios (SIR) help hospitals gauge how the HAI rates at their facility compare to a predicted number of occurrences set by the Centers for Medicare & Medicaid Services (CMS). These rates are calculated as the number of actual infection cases observed for a hospital over a 12-month period divided by the number of infection cases predicted by the CMS, which uses a regression model to estimate the number of cases that a facility will have for individual infections and conditions. Scores lower than 1 indicate that a hospital is experiencing fewer cases than predicted, and scores above 1 indicate that it is experiencing more.

**Since the installation of the hand hygiene compliance monitoring system in 2015, all five hospitals have experienced a downward trend in all rates that are in line with, or below, what would be expected.**



## Cost Reductions From Fewer HAIs

On average, infections increase hospital ancillary costs 2-3 times after controlling for patient demographics, type of infection, co-morbidities, hospital geographic region, and teaching status. Between 2015 and 2017, the estimated savings across all five hospitals, as a result of decreased HAIs, is between \$3.92 and \$4.02 million depending on whether the CAUTI infections had occurred in non-ICU or ICU settings.

HAI	Ancillary Cost/Infection	Number of Infections Reduced	Estimated Reduction in Cost For 2017
CLABSI	\$70,000 <sup>5</sup>	20	\$1,400,000
MRSA	\$14,000 <sup>6</sup>	11	\$154,000
CAUTI	\$1,700 (non-ICU) - \$10,000 <sup>7</sup> (ICU)	12	\$20,400 - \$120,000
C.diff	\$34,000 <sup>8</sup>	69	\$2,346,000
		<b>Total Savings:</b>	<b>\$3,920,400 - \$4,020,000</b>

**For more information, please visit [www.ecolab.com/compliancemonitoring](http://www.ecolab.com/compliancemonitoring)**

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